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PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re U.S. Patent Application)
Applicant: Peter LAHNOR and Stephan WEGE)
Serial No.: Not Yet Assigned)
Filed: Herewith)
For: **CMP PROCESS**)

PRELIMINARY AMENDMENT

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

This is a Preliminary Amendment for entry in the above-identified application.

In the Claims:

Please amend the claims as follows:

1. (amended) A CMP process for a contact hole or metal track etching, in which a liner deposited over the whole area on a dielectric after the patterning and a metalization layer deposited over the whole area on the liner, said metalization layer preferably being composed of tungsten or copper, are removed in regions by a chemical mechanical polishing process (CMP) which stops on the dielectric, wherein
at least in the regions surrounding the patterned portions on the dielectric, an auxiliary layer which can easily be removed by the CMP process is fashioned between dielectric and liner.

2. (amended) The CMP process as claimed in claim 1,
wherein
the auxiliary layer has a layer thickness in the range of 20 to 100 nm.
3. (amended) The CMP process as claimed in claim 1,
wherein
the auxiliary layer is used at least partly as a hard mask for the patterning and preceding
the etching by dry etching.
4. (amended) The CMP process as claimed in claim 1,
wherein
the reaching of the auxiliary layer is detected by an etching stop detection signal during
the CMP process.
5. (amended) The CMP process as claimed in claim 1,
wherein
an additional wet-chemical cleaning step is carried out at the end of the etching.
6. (amended) The CMP process as claimed in claim 1,
wherein
the auxiliary layer is composed of diamond-like carbon, carbon polymers or of porous

material.

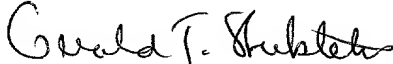
7. (amended) The CMP process as claimed in claim 6,

wherein

the auxiliary layer is used in conjunction with a CARL resist as bottom resist.

Respectfully submitted,

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

1. (amended) A CMP process for a contact hole [and/]or metal track etching, in which a liner [(2)] deposited over the whole area on a dielectric [(1)] after the patterning and a metalization layer deposited over the whole area on the liner [(2)], said metalization layer preferably being composed of tungsten or copper, are removed in regions by a chemical mechanical polishing process (CMP) which stops on the dielectric [(1)],
wherein
at least in the regions surrounding the patterned portions on the dielectric [(1)], an auxiliary layer [(4)] which can easily be removed by the CMP process is fashioned between dielectric [(1)] and liner [(2)].
2. (amended) The CMP process as claimed in claim 1,
wherein
the auxiliary layer [(4)] has a layer thickness in the range of 20 to 100 nm.
3. (amended) The CMP process as claimed in [one of the preceding claims] claim 1,
wherein
the auxiliary layer [(4)] is used at least partly as a hard mask for the patterning [-] and
preceding the etching [-] by dry etching.
4. (amended) The CMP process as claimed in [one of the preceding claims] claim 1,
wherein

the reaching of the auxiliary layer [(4)] is detected by an etching stop detection signal during the CMP process.

5. (amended) The CMP process as claimed in [one of the preceding claims] claim 1,
wherein
an additional wet-chemical cleaning step is carried out at the end of the etching.
6. (amended) The CMP process as claimed in [one of the preceding claims] claim 1,
wherein
the auxiliary layer [(4)] is composed of diamond-like carbon, carbon polymers or of porous material.
7. (amended) The CMP process as claimed in claim 6,
wherein
the auxiliary layer [(4)] is used in conjunction with a CARL resist as bottom resist.